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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/089,260	10/07/2002	Richard W. Duce	DP-301244	8074
22851	7590	07/13/2005	EXAMINER	
DELPHI TECHNOLOGIES, INC.			CYGAN, MICHAEL T	
M/C 480-410-202			ART UNIT	
PO BOX 5052			PAPER NUMBER	
TROY, MI 48007			2855	

DATE MAILED: 07/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/089,260		DUCE ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Michael Cygan		2855	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 June 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 21 and 22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 October 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Prosecution Reopened - 37 CFR § 1.198***

1. The examiner's rejections set forth in the final Office action mailed December 9, 2003 were reversed by the Board of Appeals and Interferences in the decision mailed June 16, 2005. The decision remanded the case to the examiner for consideration of (1) whether McClanahan (US 5,329,806) disclosed or made obvious the structure claimed in claims 1-12; (2) whether the claims of the instant application are patentable over Riedmeyer (US 6,315,880 B1); and (3) whether the wiring harness assembly as claimed meets the requirements set forth in 35 U.S.C. § 112.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 7, 8, 13, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by McClahanan (US 5,329,806). McClahanan discloses the claimed invention, a gas sensor comprising sensing element [42] having a lower portion disposed within a subassembly and an upper portion disposed within a wiring harness (Figure 3); a shell (Figures 2,6; [34,92]); a lower shield

[36]; a terminal support [64] comprising a channel extending therethrough and the channel comprising an indentation; a first portion of a terminal [56] disposed within said indentation of said terminal support and in electrical communication with the sensing element; an alumina ceramic insulator ([44]; column 3 lines 2-15; column 4 lines 19-21) disposed within upper shield and around the upper portion of the sensor element and having a passage for receiving a second portion of the terminal; and

a seal [38] which may be comprised of rubber (column 2, lines 66-67 and column 3 lines 18-20 and 62-63), wherein an upper shield edge [68] is disposed between a portion of a flange of the seal and a part abutting the body of the seal (Figure 2). The seal is made of one piece, as can be seen by the shading of part 38; the seal does not include the terminal support [64] (as applicant's one-piece seal [40] does not include terminal support [60]).

The method for producing the abovedescribed sensor is shown in Figure 2, where the parts are disposed as claimed.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly

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owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 5, 6, 9, 11, and 12 are rejected under 35 U.S.C. 103(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over McClahanan (US 5,329,806). The terminal support [64] and insulator [44] appear to be made of the same material as that of the lower terminal support (alumina ceramic; column 3 lines 2-15; column 4 lines 19-21). In the alternative, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use alumina ceramic as the sealing material, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use (see *In re Leshin*, 125 USPQ 416), and since the use of alumina ceramic is disclosed in McClahanan as being an appropriate sealing material for such a use, and since alumina ceramic is known in the art for providing an inexpensive, easily workable sealing component.
4. Claims 13, 16, 17, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over McClahanan (US 5,329,806) in view of Reidmeyer (US 6,315,880 B1).

McClahanan discloses the claimed invention except for the seal being a "one-piece" seal (assuming that the seal [64] of McClahanan would not correspond to a "one-piece" seal). Reidmeyer teaches a gas sensor

comprising a sensing element 3 having a lower portion disposed within a subassembly and an upper portion disposed within a wiring harness (Figure 1), a one-piece seal (grommet 23) which holds an edge of the upper shield in a continuous and concentric manner between flange and body of the seal, lower shell, upper insulator, lower shield having a plurality of apertures; see Figures 1 and 2, and column 3 line 30 through column 4 line 48. It would have been obvious to use a one-piece seal as taught by Reidmeyer in the invention taught by McClahanan to form the seal, since the use of fewer parts is notorious in the art to reduce complexity and save time and money in device fabrication.

With respect to claims 19 and 20, McClahanan discloses the claimed invention except for the terminal support comprising alumina ceramic. However, the terminal support [64] and insulator [44] appear to be made of the same material as that of the lower terminal support (alumina ceramic; column 3 lines 55-58). In the alternative, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use alumina ceramic as the sealing material, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use (see *In re Leshin*, 125 USPQ 416), and since the use of alumina ceramic is disclosed in McClahanan as being an appropriate sealing material for such a use, and since alumina ceramic is

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known in the art for providing an inexpensive, easily workable sealing component.

5. Claims 4 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over McClahanan (US 5,329,806) in view of Kuisell (US 5,817,920). The claimed invention is considered to be taught except for the ceramic being made from a fiber. Kuisell teaches the use of ceramic fibers to form an insulator for a gas sensor to be placed between sensor and outer shield/shell; see Figure 1 and column 4 lines 46-56. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use ceramic in fiber form as taught by Kuisell in the invention taught by McClahanan to form the insulator, since Kuisell teaches that such a composition is a high temperature durable material, and thereby satisfactory for exhaust gas sensors which experience high temperatures and physical abuse.
6. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over McClahanan (US 5,329,806) in view of Reidmeyer (US 6,315,880 B1) as set forth in the rejection of claim 16, further in view of Kuisell (US 5,817,920). The claimed invention is considered to be taught except for the ceramic being made from a fiber. Kuisell teaches the use of ceramic fibers to form an insulator for a gas sensor to be placed between sensor and outer shield/shell;

see Figure 1 and column 4 lines 46-56. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use ceramic in fiber form as taught by Kuisell in the invention taught by McClahanan to form the insulator, since Kuisell teaches that such a composition is a high temperature durable material, and thereby satisfactory for exhaust gas sensors which experience high temperatures and physical abuse.

7. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over McClahanan (US 5,329,806) in view of Reidmeyer (US 6,315,880 B1) as set forth in the rejection of claim 13, further in view of Watanabe (US 5,874,664). McClahanan teaches the claimed invention except for the use of a talc seal between insulator and shield. Watanabe teaches the use of a talc seal [24] (Figure 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a talc seal between insulator and shield as taught by Watanabe in the invention taught by McClahanan to form the seal, since Watanabe teaches that such a configuration results in a "fluid tight connection" of the sensor element to the housing; see column 11 lines 58-61. With respect to claim 16, McClahanan teaches the use of a second insulator [48] between the first insulator [44] and lower shield [36].



***Discussion***

8. With respect to the consideration of McClanahan, anticipation and obviousness rejections have been made from McClanahan. With respect to obviousness, the Board's has found that the advantage of a certain sensor shell top design cannot be combined with other sensor shell bottom designs due to lack of motivation.

The examiner notes that McClanahan presented specific teaching of advantage of the top design. Furthermore, McClanahan taught, through its presentation of Figures 4, 6, and 7, that a variety of sensor shell top designs can be used with any generic sensor shell bottom designs. In view of these facts, it appears that no combination of references containing different sensor top designs in which the Board would find that McClanahan would make obvious the claimed invention, regardless of the strength of the teaching. Such an interpretation is used as a guide in preparing further rejections of the claims.

Furthermore, the Board interpreted the rejection, which stated "use the alternative seal design and alternative terminal support structure of McClanahan", as reading "replacing the seal (80) of Kuisell with the seal (64) of McClahanan" (p.10). The Board further interpreted the statements of the examiner's answer at page 7 (stating that Kuisell is directed to an advantageous sensor bottom structure design) as suggesting that Kuisell's upper sensor structure would not need to be altered. Both of these

interpretations differ substantially from the examiner's arguments; rather, they reflect the appellant's characterization of the examiner's rejections and arguments (appellant's brief, page 6). Such an interpretation is used as a guide in preparing further rejections of the claims.

Obviousness arguments based upon McClanahan, and prepared in view of the findings of the Board are being presented, in keeping with the Board's request.

9. Note that the flange of Riedmeyer meets the claimed language, extending along the upper shield in a direction which if followed, leads towards the subassembly, which is clearly shown in Figure 1 of Riedmeyer.
10. The questions surrounding the interpretation of "one-piece" in the instant case are similar to the issues discussed by the Federal Circuit in the case of *In re Miskinyar*, 28 U.S.P.Q.2D (BNA) 1789. The court in *Miskinyar* stated that the drawings could be used in interpreting a term in the claims which, as in the instant application, is not specifically defined in the specification. Similar to *Miskinyar*, applicant's Figure 2 presents the "one-piece" member in a unitary shading, and the applied art (McClanahan) presents the "one-piece" member as a combination of elements containing different shadings (Figure 3). One possible interpretation, in keeping with the view of the court in *Miskinyar*, that the unitary shading defines the "one-piece" to indicate a homogeneous piece

of material. However, the applied art (McClanahan) also shows the "one-piece" member in a unitary shading (Figure 2). One must conclude either that McClanahan is indicating in Figure 2 that the member can be made of a homogeneous piece of material, or that the use of unitary shading in the art is insufficient to support a definition of homogeneity. Therefore, the situation is guided by the broadest reasonable definition of the term (as applied by the court in its examination of the scope of the term "integral" in *Miskinyar*), and therefore the claims are made obvious for the reasons set forth above. It is further noted that *Miskinyar* is not a precedential case.

11. With respect to the meaning of "one piece", the seal structure (including flange) McClahanan is in a single piece at the time of insertion of the seal structure into the metal housing, as is clearly shown in Figures 2 and 3 of McClahanan. No part of any claim requires that the seal structure be of unitary structure at the time of original formation. As stated by the Federal Circuit in the case of *In re American Academy of Science Tech Center*, 367 F.3d 1359:

"We have cautioned against reading limitations into a claim from the preferred embodiment described in the specification, even if it is the only embodiment described, absent clear disclaimer in the specification. See Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 906 (Fed. Cir. 2004) ("Even when the specification describes only a single embodiment, the claims of the patent will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using 'words or expressions of manifest exclusion or restriction.'"); Teleflex, Inc. v. Ficosa N. Am. Corp., 299

F.3d 1313, 1325 (Fed. Cir. 2002).” *In re American Academy of Science Tech Center*, 367 F.3d 1359, 1369.

The advantages which applicants contend to arise from their invention appear to arise from use of a single material “made by conventional molding techniques known in the art”; see applicant’s specification page 7 lines 23+. Applicant’s specification refers to the seal incorporated by reference merely as “[o]ne possible seal”; not as the only type of seal. Since such limitations are neither explicitly recited nor expressly inherent in the claims, any advantages which flow from these are not claimed and therefore irrelevant to the consideration of the patentability of the claims under rejection.

12. Even in the case that the claimed “one-piece” were read as to the most narrow extent possible from applicant’s specification and incorporated material, claim 13 could not possibly constitute more than a seal formed as a molded, unitary structure; in essence, a product-by-process claim. The interpretation of a product by process claim is set forth (as stated in MPEP 2113) by *In re Thorpe*:

“[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted).

Further note that the burden in product-by-process claims shifts to the applicant, as set forth by *In re Fessmann* and *In re Marosi* (MPEP 2113):

"The Patent Office bears a lesser burden of proof in making out a case of prima facie obviousness for product-by-process claims because of their peculiar nature" than when a product is claimed in the conventional fashion. *In re Fessmann*, 489 F.2d 742, 744, 180 USPQ 324, 326 (CCPA 1974). Once the examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983).


13. With respect to applicant's one-piece seal having a flange structure potentially meeting a "long-felt need" in the art, an argument could be made that forming the seal/flange of McClanahan in a unitary piece would not have been obvious (in view of *Howard v. Detroit Stove Works*, 150 US 164 (1893)), since the seal provides "unexpected results" over one-piece seals in the art, which do not have flanges. However, unitary seal/flange seals are known in the art, as shown by Fray (US 4,217,179, Figure 1 seal/flange 6) and by Reidmeyer (US 6,315,880 B1, Figure 1, grommet 23). Since such unitary, one-piece structure is known in the art for sensor seals, no "long-felt need" or "unexpected result" exists. Therefore, the finding of obviousness stands.

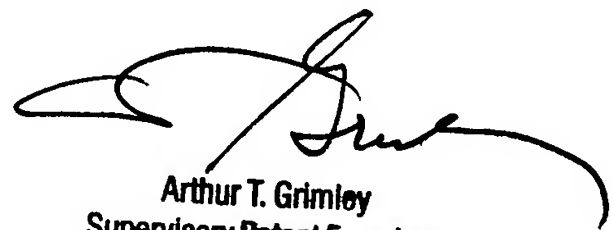
**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Cygan whose telephone number is (571) 272-2175. The examiner can normally be reached on 8:30-6 M-Th, alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on 571-272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
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